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Documentation of LCA data sets

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1 Overview

This document provides the provisions for ILCD documentation-compliant LCA data sets under the ILCD Handbook and ILCD Data Network. The document also lists the general possibilities of the ILCD data set format for the documentation of LCA data sets for technical audience (e.g. LCA practitioners and reviewers). The term “LCA data sets” is used here as cover term for the following types of data sets: Process data set, Flow data set, Flow property data set, Unit group data set, Source data set, and Contact data set. The latest addition is the LCIA method data set.

Figure 1 shows the inter-relationships of these data set types, with the Process data set being the key data set, as it provides the Life Cycle Inventory. Via the characterisation factors of the LCIA method data set, LCIA results can be calculated from the process data set's inventory.

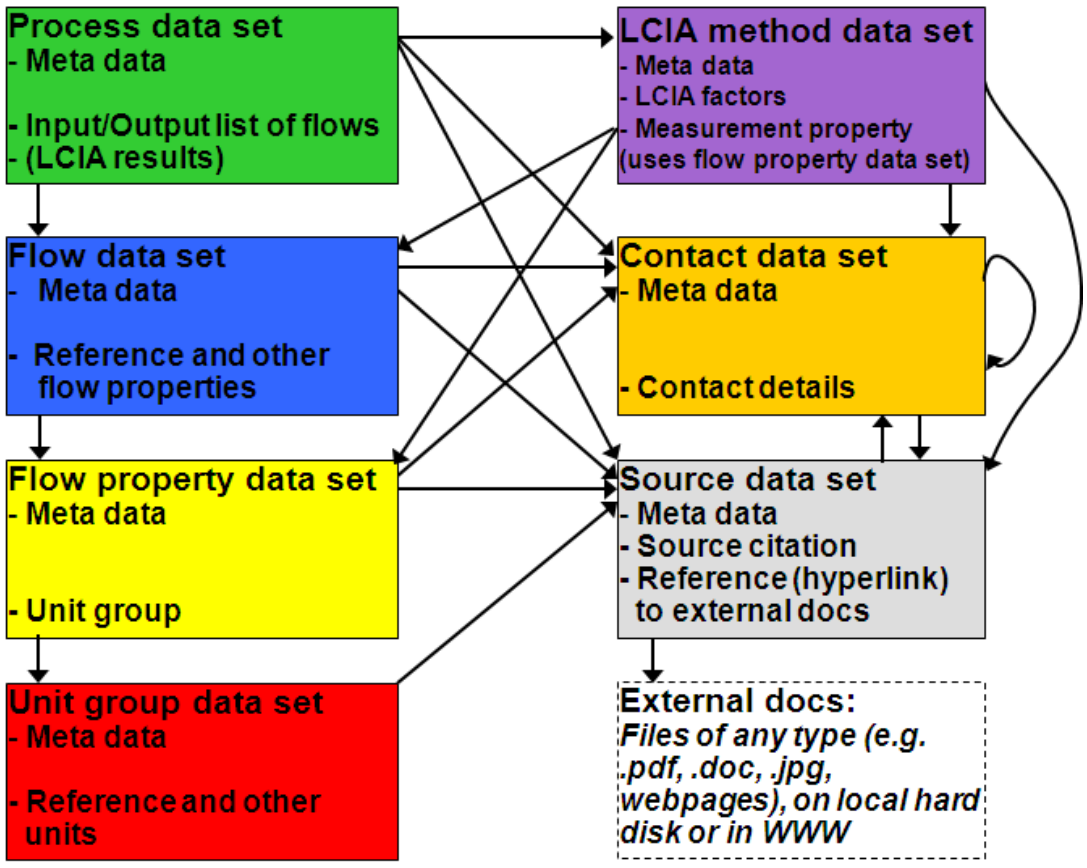


Figure 1 Inter-relationship of the data set types of the ILCD format and their core content, schematic.

Documenting data sets according to the provisions of this document ensures that the LCA practitioner gets the information that he/she needs to judge the quality and appropriateness of a data set for the specific application.

The ILCD data set format ensures that the information is provided in a well structured way and supports information loss-free electronic data exchange, avoiding errors that occur e.g. in manual transfer.

Note that applying the provisions of this document does not imply that the data meets a certain quality requirement or that the data set would be endorsed by any organisation.

Most but not all of the ILCD documentation provisions are also implemented in compliance stylesheets of the ILCD data set editor. These stylesheets support an efficient automatic checking of individual data sets and whole databases regarding the compliance of the extent of the documentation. However, the correctness and appropriateness of the documentation content can of course not be part of an automated check, but is to be judged by the LCA practitioner and/or reviewer.

Note that depending on the intended application (e.g. support of comparative studies) and target audience ("third-party report") of a data set and studies it is meant to support, further information may be mandatory in line with ISO 14044 and the ILCD Handbook.

2 Detailed provisions for LCA data set documentation

2.1 IT compatibility of data set files

An LCA data set complies with the ILCD data set format from IT perspective, if the data set is “ILCD format schema valid”, i.e. it is actually provided in the ILCD format as defined in the XSD schema files and corresponding files. Note that this does not imply ILCD-compliant documentation, which includes also the extent and correctness of the documentation (see below).

[Note to developers: This schema-validity is also fulfilled if additional “namespaces” (i.e. for additional fields defined in other formats that may be integrated into the data set) are included in the data set, in the way specified in the ILCD schema files.]

2.2 Extent of ILCD documentation

The following sub-chapters provide the detailed provisions on the scope of documentation.

The ILCD data set format is made for wide compatibility and for allowing a complete documentation of the data sets. In practice, typically only a part of the total documentation possibilities will be regularly used. To guide provision of appropriately documented datasets and to ease/focus regular use, the tables of the following chapters define therefore the minimum requirements for a well documented, i.e. **"ILCD documentation-compliant"** LCA data set. To meet the minimum requirements for ILCD-compliant documentation, at least all the documentation sections and fields (i.e. elements) given in the following sub-chapters are present and used as defined in the ILCD format.

Note that some requirements refer to the informatics / technical format of the presented information, others to the correctness / appropriateness and extent of the information. The latter can not be judged automatically but has to be verified by e.g. a reviewer.

! Note that depending on the intended application (e.g. support of comparative studies) and target audience ("third-party report") of a data set and studies it is meant to support, **further information may be mandatory in line with ISO 14044 and the ILCD Handbook.** This includes e.g. documentation of the data collection procedures, lists of excluded processes and flows, a list of assumptions made, and other items that may alternatively be attached to the data set in a LCI study report. These items and the corresponding field (if any) beyond the basic documentation compliance requirements are NOT again identified in the following tables. Details see under "Reporting" in the "ILCD Handbook - General guide for LCA".

2.3 How to read the tables

Meaning of the key information columns in the following tables

- **"Max. No. characters":** The maximum permissible number of characters is an additional compliance constraint below the number that is technically permitted for the given field type by the ILCD format. This serves to better differentiate the maximum number of chapters in a field (avoiding e.g. data set names of 500 characters) without introducing too many field types.
- **"Compliance requ. type":** This column identifies which fields are to be filled in to have a **ILCD format schema valid data set (entry "V")** and a **appropriately documented "ILCD documentation-compliant" data set according to this document (entry "C")**. In the exceptional case that a specific field can also be empty, this is stated below by putting the requirement type into brackets (e.g. "(C)"). "O" means optional. Please note that depending on the specific data set, the use of some otherwise not required fields can be required to provide accurate information. For example, if it is stated that an independent external review has been performed, the reviewer name and the review results are to be given as well. This is to be judged case-wise by the LCA practitioner and/or reviewer. In some frequently relevant cases this is pointed out in the tables of the following chapters in the "Comment" column: only in the specified **cases the field is a required "C" field, otherwise its use if optional.** (Note also that the entries of this column are similar while not identical as those of column "Requ. filter indicator"; column "Requ. filter indicator" may serve as a general filter for the format fields for use in e.g. LCA software or editors.)
- **"Indicative text lengths IF field in use (chars)":** The range given indicates a **typical extent of text** to be expected for an appropriately documented data set. This is however NOT a formal requirement that would need to always be met. [Note for developers: This information can be used to automatically check for deviations below or above the range and to provide feedback to the LCA practitioner.]
- **"Mandatory entry (if any)":** The required specific entry is given here, in case such is mandatorily to be entered for an appropriately documented ILCD data set.

The columns with grey column heading provide additional information for IT developers interested to support ILCD documentation-compliance with electronic check.

Meaning of the text colours in the following tables

- To ease the use of the following tables, for all entries that may actively to be dealt with by the LCA practitioner, the text is highlighted in dark green.
- **Among those entries that may need to be addressed by the practitioner, the REQUIRED entries (i.e. for "ILCD format schema valid" and "ILCD documentation-compliant" data sets) are further highlighted in bold.**
- For fields that are assumed to be filled in always by the LCA software tool or editor without user-interaction and fields that are just section or subsection

headings and need hence no entry are set in grey. Also all columns in the tables that are of no particular interest to the practitioner (while to IT implementers), the text is set in grey.

- The practitioner also has no direct interaction with the fields "Other content", i.e. the "namespace" extension points. The text in these rows is set in white.

2.4 Process data set

Preceding remark: How much effort is it to appropriately document a Process data set?

By pre-defining entries and requiring condensed text information, the effort to document a process data set in the ILCD format is by far lower than writing a full LCI study report. At the same time the data set already provides virtually all relevant information to the user and eases electronic exchange and management of the information: An appropriately documented process data set therefore can fulfil - together with background method reports - the ISO 14044 requirements for a "Third party report".

On the effort, for orientation and referring to a typical[1] data set: The data set type “Process data set” has a total of 123 fields that can carry a specific entry (i.e. without counting the 41 section and subsection headings that only structure the data set). 4 of these fields are mandatory for a schema-valid data set (and these are typically filled in automatically, e.g. the UUID and the data set version number), and 64 are required for an "ILCD documentation compliant" data set. Of these 64 fields, 54 are to be dealt with by the LCA practitioner (respectively reviewer). The other 10 fields are always automatically filled in by the LCA software or editor.

However, of the 54 fields that are to be handled by the practitioner and that are required for an appropriately documented ILCD data set, for 20 fields the practitioner is to select entries from predefined lists, e.g. via pull-down menus. 10 fields are references to other data sets (Source, Contact, Flow, or LCIA method data sets). (For the extent of information documented in these referenced data sets, see the subsequent chapters). Several of the other fields can often also automatically be filled in by the LCA software, especially can organisation-wide or user-specific defaults be defined on e.g. data set modeller, copyright, LCI method principle, etc. Only 20 fields require the practitioner to actually provide a short freely formulated text entry and 4 to enter numbers. In many cases several of the above counted 20 text fields will need to carry the entry “none” (e.g. in case of no deviations from method approaches, no access restrictions, etc.), limiting the actual effort. While a number of fields can have multiple occurrences (e.g. references to sources used, input/output flows, etc.), none of these multiple occurrence fields is a free text field. For all data set types case-wise it can be necessary to fill in additional fields to correctly document a data set; this is to be judged case-wise.

In addition to the fields in the Process data set, the referenced e.g. flow, contact and source data sets need to be documented as well; these are regularly reused across the various Process data sets.

[1] Note that for parameterised data sets 5 additional fields are to be filled in.

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
Process data set	***processDataSet***	***m***	[1,1]			V				1
version	@version	m		SchemaVersion		V			The actual ILCD format schema version is to be referenced.	1-a
location	@locations	m		String		V			The file ILCDLocations.xml should be referenced, or another locations-file that includes the specified locations of the ILCDLocations.xml file.	1-b
Meta data only	@metaDataOnly	o		boolean		C			„yes“ only for data sets without the Inputs and Outputs and Mathematical model sections, i.e. for a purely descriptive meta data set without inventory data.	1-c
Process information	***processInformation***	**m**	[1,1]			V				1-1
Key Data Set Information	***dataSetInformation***	**m**	[1,1]			V				1-1-2
UUID of Process data set	UUID	m	[1,1]	UUID		V				1-1-2-1
Name	*name*	r	[0,1]			C				1-1-2-2
Base name	baseName	r	[1,1]	StringMultiLang	**100**	**C**	**10 … 50**		**Naming conventions of the „ILCD - Nomenclature and other conventions“ document shall be applied.**	1-1-2-2-1
Treatment, standards, routes	treatmentStandardsRoutes	r	[0,1]	StringMultiLang	**100**	**C**	**5 … 30**		**Naming conventions of the „ILCD - Nomenclature and other conventions“ document shall be applied. If - in rare cases - the field has no meaningful entry, enter a blank (" ").**	1-1-2-3
Mix and location types	mixAndLocationTypes	r	[0,1]	StringMultiLang	**100**	**C**	**5 … 30**		**Naming conventions of the „ILCD - Nomenclature and other conventions“ document shall be applied. If - in rare cases - the field has no meaningful entry, enter a blank (" ").**	1-1-2-4

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
Quantitative product or process properties	functionalUnitFlowProperties	r	[0,1]	StringMultiLang	**100**	**C**	**5 … 30**		**Naming conventions of the „ILCD - Nomenclature and other conventions“ document shall be applied. If - in rare cases - the field has no meaningful entry, enter a blank (" ").**	1-1-2-5
Other content	*other*	*o*	[0,1]			O				0
Identifier of sub-data set	identifierOfSubDataSet	o	[0,1]	String		O				1-7-32-131
Synonyms	synonyms	o	[0,1]	FTMultiLang		O			It is recommended to ease the identification of monofunctional processes by adding synonyms, be it synonymous chemical names, trivial names or brand names.	1-1-2-6
Complementing processes	*complementingProcesses*	o	[0,1]			O				1-1-2-8
Complementing process	complementingProcess	o	[1,n]	GlobalReferenceType		O				1-1-2-8-1
Classification information	*classificationInformation*	r	[0,1]			C				1-1-2-7
Classification	*classification*	r	[0,n]			C				1-1-2-7-2
Name	@name	r		string	**100**	**C**	**10 … 75**		**The classes of the file ILCDClassification.xml shall be used. Classes of additional classification systems can be added only via separate "Classification" field sets.**	1-1-2-7-2-a
Classes	@classes	r		anyURI		C				1-1-2-7-2-b
class	*class*	r	[1,n]			C				1-1-2-7-2-1
Hierarchy level	@level	r		LevelType		C				1-1-2-7-2-1-a
Unique class identifier	@classId	r		string	**200**	**C**	**1 … 150**		**The classes of the file ILCDClassification.xml shall be used. Classes of additional classification systems can be added only via separate**	1-1-2-7-2-1-b

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
									"Classification" field sets.	
Other content	other	o	[0,1]			O				0
General comment on data set	generalComment	o	[0,1]	FTMultiLang		O				1-1-2-12
Data set LCA report, background info	referenceToExternalDocumentation	o	[0,n]	GlobalReferenceType		O			It is recommended to provide a more comprehensive documentation via a referenced/attached LCI study report, ideally using the ILCD report template (which is optional). A report is required, if the data set is foreseen to be used for comparative studies and the documentation inside the data set does not meet the requirements of a "Third-party report" under ISO 14044 and the ILCD.	1-1-2-13
Other content	other	o	[0,1]			O				0
Quantitative reference	***quantitativeReference***	r	[0,1]			C				1-1-4
Type of quantitative reference	@type	r		TypeOfQuantitativeReferenceValues		**C**			**Recommended to be of the type „Reference flow(s)“.**	1-1-4-15
Reference flow(s)	referenceToReferenceFlow	r	[0,n]	Int6		**C**			**If "Type of quantitative reference" is "Reference flow", at least one reference flow is to be identified among the input/output product or waste flows.**	1-1-4-16
Functional unit, Production period, or Other parameter	functionalUnitOrOther	r	[0,n]	StringMultiLang		**C**	**20 … 100**		**Required ("C"), if field "Type of quantitative reference", is of type other than "Reference flow(s)". However also if of type "Reference flow(s)", it is recommended, to additionally give one or more functional units for the reference flow(s). If**	1-1-4-17

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
									the data set is foreseen to be used in comparative studies, this might be a formal requirement under ISO.	
Other content	other	o	[0,1]			O				0
Time representativeness	***time***	**r**	[0,1]			C				1-1-6
Reference year	referenceYear	r	[0,1]	Year		**C**			**Note the definition of the field.**	1-1-6-18
Data set valid until:	dataSetValidUntil	r	[0,1]	Year		**C**				1-1-6-19
Time representativeness description	timeRepresentativenessDescription	r	[0,1]	FTMultiLang		**C**	**20 … 100**			1-1-6-20
Other content	other	o	[0,1]			O				0
Geographical representativeness	***geography***	**r**	[0,1]			C				1-1-8
Location	*locationOfOperationSupplyOrProduction*	r	[0,1]			C				1-1-8-21
Location	@location	r		NullableString	**25**	**(C)**	**2 … 20**		**Shall use one of the locations that are specified in the ILCDLocations.xml or other file, as referenced in the field „<processDataSet @locations>. Empty if geography-unspecific e.g. technology-model data set (i.e. ONLY enter "GLO" if the data set represents worldwide average data).**	1-1-8-21
Latitude and Longitude	@latitudeAndLongitude	o		GIS		O			If a link to a GIS is foreseen: For country or other region-code representative data sets, the "Location" code can be used to identify the Latitude and Longitude shape data of the country/region;	1-1-8-23

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
									Alternatively it is recommended to use the data of the centre of the country/region.	
Geographical representativeness description	descriptionOfRestrictions	o	[0,1]	FTMultiLang		**C**	**20 … 200**			1-1-8-24
Other content	other	o	[0,1]			O				0
Sub-location(s)	*subLocationOfOperationSupplyOrProduction*	o	[0,n]			O				1-1-8-22
Sub-location(s)	@subLocation	o		String	25	O	2 …20		Note the field definition.	1-1-8-22
Latitude and Longitude	@latitudeAndLongitude	o		GIS		O				1-1-8-23
Geographical representativeness description	descriptionOfRestrictions	o	[0,1]	FTMultiLang		**C**	**20 … 500**		**Required ("C") only if field "Sublocation(s)" has an entry.**	1-1-8-24
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Technological representativeness	***technology***	**r**	[0,1]			C				1-1-10
Technology description including background system	technologyDescriptionAndIncludedProcesses	r	[0,1]	FTMultiLang		**C**	**200 … 4000**			1-1-10-25
Included data sets	referenceToIncludedProcesses	r	[0,n]	GlobalReferenceType		O			It is recommended to reference all quantitatively relevant ("key") included process data sets. Field should stay un-used only for single operation unit processes or if included processes are not	1-1-10-26

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
									available/documented as separate ILCD-formatted data sets or meta data sets.	
Technical purpose of product or process	technologicalApplicability	r	[0,1]	FTMultiLang		**C**	**50 … 400**			1-1-10-27
Pictogramme of technology	referenceToTechnologyPictogramme	o	[0,1]	GlobalReferenceType		O				1-1-10-28
Flow diagramm(s) or picture(s)	referenceToTechnologyFlowDiagrammOrPicture	o	[0,n]	GlobalReferenceType		**C**			**System boundary diagram should be placed here as well. Technical flow charts are recommended to improve documentation of most data sets.**	1-1-10-29
Other content	other	o	[0,1]			O				0
Mathematical model	***mathematicalRelations***	**o**	[0,1]			C			This whole section is required only for parameterised LCI data sets.	1-1-12
Model description	modelDescription	o	[0,1]	FTMultiLang		**C**	**50 … 4000**		**This entry is required ("C") only for parameterised LCI data sets, i.e. if at least one field "Name of variable" is in use.**	1-1-12-31
Variable / parameter	*variableParameter*	o	[0,n]			C				1-1-12-33
Name of variable	@name	o		MatV	**25**	**C**	**5 … 15**		**This entry is required ("C") only for parameterised LCI data sets, for at least on set of "Variable / parameter" fields.**	1-1-12-33-1
Formula	formula	o	[0,1]	MatR		**C**			**This entry is empty if the "Name of the variable" is a parameter that is defined by the "Mean value" given, i.e. a formula should be entered only if it actually is a variable that is calculated along a formula.**	1-1-12-32
Mean value	meanValue	o	[0,1]	Real		**C**			**This entry is required ("C") only for parameterised LCI data sets, if a "Name of variable" is given.**	1-1-12-34

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
									If this one is a variable the "Mean value" is the calculated result of the "Formula" field with the given parameterisation (i.e. with the default parameter settings).	
Minimum value	minimumValue	o	[0,1]	Real		O				1-1-12-35
Maximum value	maximumValue	o	[0,1]	Real		O				1-1-12-36
Uncertainty distribution type	uncertaintyDistributionType	o	[0,1]	UncertaintyDistributionTypeValues		O				1-1-12-37
Relative StdDev in %	relativeStandardDeviation95In	o	[0,1]	Perc		O				1-1-12-38
Comment, units, defaults	comment	o	[0,1]	StringMultiLang	**200**	**C**	**5 … 100**		**This entry is required ("C") only for parameterised LCI data sets.**	1-1-12-39
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Modelling and validation	***modellingAndValidation***	**r**	[0,1]			C				1-3
LCI method and allocation	***LCIMethodAndAllocation***	**r**	[0,1]			C				1-3-14
Type of data set	typeOfDataSet	r	[0,1]	TypeOfProcessValues		**C**			**Note the differences between "LCI result" and "Partly terminated system" data sets.**	1-3-14-40
LCI method principle	LCIMethodPrinciple	r	[0,1]	LCIMethodPrincipleValues		**C**			**Make sure that the entry fits with the approach declared in the section „Compliance declarations“ and the entry/ies in the field „LCI method approaches“. Note: For data sets that are made for the**	1-3-14-41

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
									Situations A, B, C1 or C2 of the ILCD Handbook, this fact is to be entered in the field "Compliance declarations".	
Deviation from LCI method principle / explanations	deviationFromLCIMethodPrinciple	r	[0,1]	FTMultiLang		**C**	**4 … 400**		**Enter "None", if no deviations.**	1-3-14-42
LCI method approaches	lciMethodApproaches	r	[0,n]	LCIMethodApproachesValues		**C**			**Make sure that the entry fits with the approach declared in the section „Compliance declarations“ and the entry/ies in the field „LCI method principle“.**	1-3-14-43
Deviations from LCI method approaches / explanations	deviationsFromLCIMethodApproaches	r	[0,1]	FTMultiLang		**C**	**4 … 400**		**Enter "None", if no deviations.**	1-3-14-44
Modelling constants	modellingConstants	r	[0,1]	FTMultiLang		**C**				1-3-14-45
Deviation from modelling constants / explanations	deviationFromModellingConstants	r	[0,1]	FTMultiLang		**C**	**4 … 400**		**Enter "None", if no deviations.**	1-3-14-46
LCA methodology report	referenceToLCAMethodDetails	o	[0,n]	GlobalReferenceType		O			It is recommended to reference the methodology protocol applied. For ILCD-method compliant data sets this is the "ILCD Handbook - Specific guide for LCI data sets". Note that such a report might be required if the data set is intended to be used in comparative studies to ensure it meets the "third-party report" requirements of ISO14044 and the ILCD.	1-3-14-47
Other content	other	o	[0,1]			O				0
Data sources,	***dataSourcesTre***	**r**	[0,1]			C				1-3-16

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
treatment, and representativeness	*atmentAndRepresentativeness*									
Data cut-off and completeness principles	dataCutOffAndCompletenessPrinciples	r	[0,1]	FTMultiLang		**C**	**100 … 300**		**Make sure to meet the cut-off and completeness requirements as defined for the data quality level that you claim in sub-section "Validation/Data quality indicators" and the section „Compliance declarations“.**	1-3-16-48
Deviation from data cut-off and completeness principles / explanations	deviationFromDataCutOffAndCompletenessPrinciples	r	[0,1]	FTMultiLang		**C**	**4 … 400**		**Enter "None", if no deviations.**	1-3-16-49
Data selection and combination principles	dataSelectionAndCombinationPrinciples	r	[0,1]	FTMultiLang		**C**	**50 … 300**		**Make sure to meet the method requirements as defined for the data method type and quality level that you claim in the section „Compliance declarations“. For „LCI results“ and „partly terminated systems“ data sets also check the „Included processes“.**	1-3-16-50
Deviation from data selection and combination principles / explanations	deviationsFromCutOffAndCompletenessPrinciples	r	[0,1]	FTMultiLang		**C**	**4 … 400**		**Enter "None", if no deviations.**	1-3-16-51
Data treatment and extrapolations principles	dataTreatmentAndExtrapolationsPrinciples	r	[0,1]	FTMultiLang		**C**	**50 … 300**		**Make sure to meet the technological, geographical and time representativeness requirements as defined for the data quality level that you claim in sub-section "Validation/Data quality indicators" and the section „Compliance**	1-3-16-52

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
									declarations“. Also check with entries you give in the respective „… representativeness“ sections.	
Deviation from data treatment and extrapolations principles / explanations	deviationsFromTreatmentAndExtrapolationPrinciples	r	[0,1]	FTMultiLang		**C**	**4 … 400**		**Enter "None", if no deviations.**	1-3-16-53
Data handling report	referenceToDataHandlingPrinciples	o	[0,n]	GlobalReferenceType		O				1-3-16-54
Data source(s) used for this data set	referenceToDataSource	r	[0,n]	GlobalReferenceType		**C**			**Provide citations/reference of all relevant data sources, including for the relevant ("key") included processes of the background system, if any.**	1-3-16-55
Percentage supply or production covered	percentageSupplyOrProductionCovered	r	[0,1]	Perc		**C**			**Especially for generic or average data sets, consider which market-relevant technologies are actually and explicitly addressed/included in the inventory of this data set.**	1-3-16-57
Annual supply or production volume	annualSupplyOrProductionVolume	o	[0,1]	StringMultiLang		O	10 … 20		Note that for data sets that are intended to be used in a decision context, it is recommended to document the "market size" here, to later be able to check whether a modelled scenario has large-scale consequences on the market.	1-3-16-58
Sampling procedure	samplingProcedure	o	[0,1]	FTMultiLang		O	20 … 500			1-3-16-59
Data collection period	dataCollectionPeriod	o	[0,1]	StringMultiLang		O	10 … 50			1-3-16-60
Uncertainty adjustments	uncertaintyAdjustments	o	[0,1]	FTMultiLang		O	4 … 200			1-3-16-61

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
Use advice for data set	useAdviceForDataSet	r	[0,1]	FTMultiLang		**C**	**100 … 1000**		**In case no specific methodological use advice needs to be given, please enter "no specific methodological advice".**	1-3-16-62
Other content	other	o	[0,1]			O				0
Completeness	***completeness***	**o**	[0,1]			O				1-3-18
Completeness product model	completenessProductModel	r	[0,1]	CompletenessValues		**C**			**Make sure to meet the cut-off and completeness requirements as defined for the data quality level that you claim in sub-section "Validation/Data quality indicators" and the section „Compliance declarations“.**	1-3-18-63
Supported impact assessment methods	referenceToSupportedImpactAssessmentMethods	r	[0,n]	GlobalReferenceType		**C**			**Usability of this field pending finalisation of the implementation of the "LCIA method data set". If specific data sets are unavailable, a reference to an empty default "LCIA method data set" can be put.**	1-3-18-64
Completeness elementary flows, per topic	*completenessElementaryFlows*	*r*	*[0,n]*			*C*				1-3-18-65
completeness type	@type	r		CompletenessTypeValues		**C**				1-3-18-65-1
value	@value	r		CompletenessValues		**C**				1-3-18-65-2
Completeness other problem field(s)	completenessOtherProblemField	o	[0,1]	FTMultiLang		O	50 … 200			1-3-18-80
Other content	other	o	[0,1]			O				0
Validation	***validation***	**r**	[0,1]			C				1-3-20
Review	*review*	r	[0,n]			C				1-3-21
Type of	@type	r		TypeOfRev		**C**			**Make sure that the performed /**	1-3-20-81

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
review				iewValues					**stated review type meets the requirements of the „review compliance“ that you state in section „Compliance declarations“. The ILCD generally requires an independent review for externally provided data sets; details see "ILCD compliance" documentation.**	
Scope of review	*scope*	*r*	*[0,n]*			*C*				*1-3-20-82*
Scope name	@name	r		ScopeOfReviewValues		**C**			**Make sure that the performed / stated review scope meets the requirements of the „review compliance“ that you state in section „Compliance declarations“.**	1-3-20-82-1
Method(s) of review	*method*	*r*	*[0,n]*			*C*				*1-3-20-83*
Method name	@name	r		MethodOfReviewValues		**C**			**Make sure to meet the cut-off and completeness requirements as defined for the data quality level that you claim in sub-section "Validation/Data quality indicators" and the section „Compliance declarations“. Make sure that the performed / stated review methods meets the requirements of the „review compliance“ that you state in section „Compliance declarations“.**	1-3-20-83-1
Data quality indicators	*dataQualityIndicators*	*r*	*[0,1]*			*(C)*			*This section and in that case all fields in it are required if "Compliance system name" references one of the ILCD-compliance systems, EXCEPT for "ILCD Data Network - entry-level" requirements, for which this is*	*1-3-20-90*

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
									optional.	
Data quality indicator	*dataQualityIndicator*	*r*	*[1,n]*			*(C)*			*see comment at "Data quality indicator"*	*1-3-20-91*
Name of data quality indicator	@name	r		DataQualityIndicatorValues		**(C)**			*see comment at "Data quality indicator".* **Make sure that the data quality indicator matches the requirements of the „quality“, „method“, „nomenclature“, „documentation“, and „review“ compliance that you state in section „Compliance declarations“.**	1-3-20-91-1
Value of data quality indicator	@value	r		QualityValues		**(C)**			*see comment at "Data quality indicator".* **Make sure that the data quality indicator matches the requirements of the „quality“, „method“, „nomenclature“, „documentation“, and „review“ compliance that you state in section „Compliance declarations“.**	1-3-20-91-2
Review details	reviewDetails	r	[0,1]	FTMultiLang		**C**	**1000 … 3000**			1-3-20-84
Reviewer name and institution	referenceToNameOfReviewerAndInstitution	r	[0,n]	GlobalReferenceType		**C**				1-3-20-87
Other review details	otherReviewDetails	o	[0,1]	FTMultiLang		**O**	50 … 500			1-3-20-88
Complete review report	referenceToCompleteReviewReport	r	[0,1]	GlobalReferenceType		O			May be required depending on compliance to be met and intended applications / target audience. Recommended also for other cases.	1-3-20-89
Other content	other	o	[0,1]			O				0

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
Other content	other	o	[0,1]			O				0
Compliance declarations	***complianceDeclarations***	*r*	*[0,1]*			*C*				*1-3-22*
Compliance	*compliance*	*r*	*[1,n]*			*C*				*1-3-22-1*
Compliance system name	referenceToComplianceSystem	r	[1,1]	GlobalReferenceType		**C**		**One of the following entries and source data sets (Note: instead of "A", also "B", "C1" and "C2" may be used, as applicable):** • **"ILCD Data Network - Entry-level"** • **"ILCD-compliant, Situation A - High quality data"** • **"ILCD-compliant, Situation A - Basic quality data"** • **"ILCD-compliant, Situation A - Data estimate".** **See "ILCD Data Network: Compliance rules and entry-level requirements".**	**Must reference to the corresponding source data set of the most recent version of one of the ILCD compliance system variants. For the definitions for use in the ILCD Data Network see; see the separate document "ILCD : Compliance rules and entry-level requirements". For general ILCD-compliance requirements for LCI data sets see also the "Specific guide for LCI data sets".** **Other compliance systems (e.g. of specific EPD schemes etc.) can be referenced in addition.**	1-3-22-90
Approval of overall	approvalOfOverallComplian	o	[0,1]	ComplianceValues		**C**			**For the ILCD related compliance system entries: Make sure to**	1-3-22-95

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
compliance	ce								**meet the overall requirements; for an overview and specific settings for the ILCD Data Network see the separate document "ILCD Data Network: Compliance rules and entry-level requirements".**	
Quality compliance	qualityCompliance	r	[0,1]	ComplianceValues		**C**			**For the ILCD related compliance system entries: Make sure to meet the quality requirements. For an overview and specific settings for the ILCD Data Network see the separate document "ILCD Data Network: Compliance rules and entry-level requirements".**	1-3-22-9X
Nomenclature compliance	nomenclatureCompliance	r	[0,1]	ComplianceValues		**C**			**For the ILCD related compliance system entries: Make sure to meet the nomenclature requirements. For an overview and specific settings for the ILCD Data Network see the separate document "ILCD Data Network: Compliance rules and entry-level requirements".**	1-3-22-92
Methodological compliance	methodologicalCompliance	r	[0,1]	ComplianceValues		**C**			**For the ILCD related compliance system entries: Make sure to meet the method requirements. For for an overview and specific settings for the ILCD Data Network see the separate document "ILCD Data Network: Compliance rules and entry-level requirements".**	1-3-22-91
Review compliance	reviewCompliance	r	[0,1]	ComplianceValues		**C**			**For the ILCD related compliance system entries: Make sure to meet the review requirements. For an overview and specific settings for the ILCD Data Network see the separate**	1-3-22-93

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
									document "ILCD Data Network: Compliance rules and entry-level requirements".	
Documentation compliance	documentationCompliance	r	[0,1]	ComplianceValues		**C**			**For the ILCD related compliance system entries: Make sure to meet the documentation requirements. For an overview and specific settings for the ILCD Data Network see the separate document "ILCD Data Network: Compliance rules and entry-level requirements".**	1-3-22-94
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Administrative information	***administrativeInformation***	**r**	[0,1]			C				1-5
Commissioner and goal	***commissionerAndGoal***	**r**	[0,1]			C				1-5-24
Commissioner of data set	referenceToCommissioner	r	[0,n]	GlobalReferenceType		**C**			**Note the definition of the field.**	1-5-24-96
Project	project	o	[0,1]	StringMultiLang		O	20 … 200			1-5-24-97
Intended applications	intendedApplications	r	[0,1]	FTMultiLang		**C**			**Make sure the entry fits with the declared „LCI method principle“, „Compliance declarations“, any potential specific requirements on reporting put by ISO 14044 and the ILCD Handbook (e.g. "third-party report"), and the „Type of data set“.**	1-5-24-98
Other content	other	o	[0,1]			O				0
Data set generator / modeller	***dataGenerator***	**r**	*[0,1]*			*C*				*1-5-26*
Data set	referenceToPer	r	[0,n]	GlobalRefe		**C**				1-5-26-99

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
generator / modeller	sonOrEntityGeneratingTheDataSet			renceType						
Other content	other	o	[0,1]			O				0
Data entry by	***dataEntryBy***	***r***	*[0,1]*			*C*				*1-5-28*
Time stamp (last saved)	timeStamp	r	[0,1]	dateTime		C				1-5-28-104
Data set format(s)	referenceToDataSetFormat	r	[0,n]	GlobalReferenceType		C		„ILCD format“	Must include the reference to the most recent ILCD format version, with its original source data set and UUID / URI. (Can have additional references to other formats („namespaces“) that might be used in the data set for additional information beyond the documentation scope of the ILCD format.)	1-5-28-105
Converted original data set from:	referenceToConvertedOriginalDataSetFrom	o	[0,1]	GlobalReferenceType		O				1-5-28-108
Data entry by:	referenceToPersonOrEntityEnteringTheData	o	[0,1]	GlobalReferenceType		**C**				1-5-28-103
Official approval of data set by producer/operator:	referenceToDataSetUseApproval	r	[0,n]	GlobalReferenceType		**C**			**Used only if official approval is given by the good producer or service operator of the product represented by the data set. If such is not given, insert a reference to an empty default contact data set with a "No official approval" text entry.**	1-5-28-109
Other content	other	o	[0,1]			O				0
Publication and ownership	***publicationAndOwnership***	***r***	*[0,1]*			*C*				*1-5-30*
Data set version	dataSetVersion	m	[1,1]	Version		**V**			**Is typically automatically generated, but may need to be manually adjusted; make sure the proper format ("XX.XX.XXX") is used.**	1-5-30-111

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
Date of last revision	dateOfLastRevision	r	[0,1]	dateTime		**C**				1-5-30-113
Preceding data set version	referenceToPrecedingDataSetVersion	o	[0,n]	GlobalReferenceType		O				1-5-30-112
Permanent data set URI	permanentDataSetURI	r	[0,1]	anyURI		O			It is strongly recommended to provide a URI that can be used to find the original version of the data set and verify changes or availability of new versions.	1-5-30-300
Workflow and publication status	workflowAndPublicationStatus	o	[0,1]	WorkflowAndPublicationStatusValues		O				1-5-30-110
Unchanged re-publication of:	referenceToUnchangedRepublication	o	[0,1]	GlobalReferenceType		O				1-5-30-114
Registration authority	referenceToRegistrationAuthority	o	[0,1]	GlobalReferenceType		O				1-5-30-200
Registration number	registrationNumber	o	[0,1]	String		O				1-5-30-201
Owner of data set	referenceToOwnershipOfDataSet	r	[0,1]	GlobalReferenceType		**C**				1-5-30-115
Copyright?	copyright	r	[0,1]	boolean		**C**				1-5-30-116
Entities or persons with exclusive access to this data set	referenceToEntitiesWithExclusiveAccess	o	[0,n]	GlobalReferenceType		O				1-5-30-117
License type	licenseType	r	[0,1]	LicenseTypeValues		**C**				1-5-30-119
Access and use restrictions	accessRestrictions	r	[0,1]	FTMultiLang		**C**	**4 … 400**			1-5-30-118
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
Inputs and Outputs	***exchanges***	**r**	[0,1]			C				1-7
Inputs and Outputs	***exchange***	**r**	[0,n]			C				1-7-32
Data set internal ID	@dataSetInternalID	r		Int6		C				1-7-32-120
Reference to flow data set	referenceToFlowDataSet	r	[1,1]	GlobalReferenceType		**C**				1-7-32-119
Location	location	o	[0,1]	String	25	O	2 … 20		Usually not used field. See field definition.	1-7-32-121
Reminder flow?	functionType	r	[0,1]	ExchangeFunctionTypeValues		O			For normal inventory flows, other than reminder flows, the field is to remain un-used.	1-7-32-122
Exchange direction	exchangeDirection	r	[0,1]	ExchangeDirectionValues		**C**				1-7-32-123
Variable	referenceToVariable	o	[0,1]	string		O			Required only for parameterised data sets and for those flows only that are scaled via one of the „Parameters“ or „Variables“ of the section „Mathematical model“.	1-7-32-124
Mean amount	meanAmount	r	[1,1]	Real		**C**				1-7-32-125
Resulting amount	resultingAmount	r	[0,1]	Real		**C**				1-7-32-126
Minimum amount	minimumAmount	o	[0,1]	Real		O				1-7-32-127
Maximum amount	maximumAmount	o	[0,1]	Real		O				1-7-32-128
Uncertainty distribution type	uncertaintyDistributionType	o	[0,1]	UncertaintyDistributionTypeValues		O				1-7-32-129
Relative StdDev in %	relativeStandardDeviation95In	o	[0,1]	Perc		O				1-7-32-130
allocations	*allocations*	o	[0,1]			O				1-7-32-200
allocation	*allocation*	o	[1,n]			O				1-7-32-201

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
Internal reference to co-product	@internalReferenceToCoProduct	o		Int6		O				1-7-32-202
Allocated fraction	@allocatedFraction	o		Perc		O				1-7-32-203
Data source type	dataSourceType	o	[0,1]	DataSourceTypeValues		**C**			**Required ("C") for unit process data sets only. (For the other, aggregated data set types the entry will almost always be „Mixed primary/secondary“ and is hence non-informative).**	1-7-32-132
Data derivation type / status	dataDerivationTypeStatus	o	[0,1]	DataDerivationTypeStatusValues		**C**			**Required ("C") only if "Type of data set" is "unit process, ...". Recommended also for other data set types.**	1-7-32-133
Data source(s)	*referencesToDataSource*	o	[0,1]			O				1-7-32-134
Data source(s)	referenceToDataSource	o	[0,n]	GlobalReferenceType		O				1-7-32-134
Other content	other	o	[0,1]			O				0
Comment	generalComment	o	[0,1]	StringMultiLang		O	10 … 100			1-7-32-136
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
LCIA results	***lciaResults***	**o**	[0,1]			O				1-8
LCIA result	***lciaResult***	**o**	[0,n]			O				1-8-1
LCIA method	referenceToLciaDataSet	o	[1,1]	GlobalReferenceType		O				1-8-1-100
Mean amount	meanAmount	o	[1,1]	Real		O				1-8-1-101
Uncertainty distribution type	uncertaintyDistributionType	o	[0,1]	UncertaintyDistributionTypeValues		O				1-8-1-102
Relative StdDev in %	relativeStandardDeviation95In	o	[0,1]	Perc		O				1-8-1-103

PROCESS DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (specific requirements, recommendations, explanations)	eDoc ID
Comment	generalComment	o	[0,1]	StringMultiLang		O	20 …200			1-8-1-104
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0

2.5 Flow data set

LCA practitioners should rarely need to create new elementary flow data sets, as a huge set is provided as ILCD reference elementary flow data sets. Product and Waste flows in contrast are regularly to be created by the practitioner. For naming and classifying new flow data sets and assigning appropriate reference flow properties and units, see the respective chapters of the “Nomenclature and other conventions" document.

FLOW DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
Flow data set	***flowDataSet***	***m***	***[1,1]***			***V***				***2***
	@version	m		SchemaVersion		V			The actual ILCD format schema version is to be referenced.	
	@locations	o		String		O			Only for Product and Waste flows and only if "Locations" are used for flow data sets: The file ILCDLocations.xml should be referenced, or another locations-file that includes the specified locations of the ILCDLocations.xml file.	
Flow information	***flowInformation***	***m***	***[1,1]***			***V***				***2-9***
Data set information	***dataSetInformation***	***m***	***[1,1]***			***V***				***2-9-36***
UUID of flow	UUID	m	[1,1]	UUID		V				2-9-36-137

FLOW DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
data set										
Name	*name*	R	*[0,1]*			*C*				*2-9-36-138-1*
Base name	baseName	R	[1,1]	StringMultiLang	**100**	**C**	**10 … 50**		**Naming conventions of the „ILCD Handbook - Nomenclature and other conventions“ document are to be applied.**	2-9-36-138
Treatment, standards, routes	treatmentStandardsRoutes	R	[0,1]	StringMultiLang	100	O	5 … 30		Field will regularly be used for product and waste flows. Naming conventions of the „ILCD - Nomenclature and other conventions“ document are to be applied.	2-9-36-139
Mix and location types	mixAndLocationTypes	R	[0,1]	StringMultiLang	100	O	5 … 30		Field will regularly be used for product and waste flows. Naming conventions of the „ILCD - Nomenclature and other conventions“ document are to be applied.	2-9-36-140
Quantitative flow properties	flowProperties	R	[0,1]	StringMultiLang	100	O	5 … 30		Field will regularly be used for product and waste flows. Naming conventions of the „ILCD - Nomenclature and other conventions“ document are to be applied.	2-9-36-141
Other content	other	O	[0,1]			O				0
Synonyms	synonyms	O	[0,1]	FTMultiLang		O			It is recommended to ease the identification of product flows by adding synonyms, be it synonymous chemical names, trivial names or brand names.	2-9-36-142
Category and classification information	*classificationInformation*	R	[0,1]			C				2-9-36-143
Elementary flow categorization	*elementaryFlowCategorization*	*R*	*[0,n]*			*C*			*Required ("C") only if "Type of flow" is "Elementary flow". Not applicable if "Product flow" or "Waste flow".*	*2-9-36-144*
Name of	@name	R		string	**100**	**C**	**5 … 50**		**Required ("C") only if "Type of**	2-9-36-144-a

FLOW DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
categorization system									**flow" is "Elementary flow". Not applicable if "Product flow" or "Waste flow".**	
Categories file	@categories	o		anyURI		C		Reference to "ILCDFlowCategorization.xml" required for elementary flows.	Required ("C") only if "Type of flow" is "Elementary flow". Not applicable if "Product flow" or "Waste flow".	2-9-36-144-b
Category name	*category*	*R*	*[1,n]*			*C*			*Required ("C") only if "Type of flow" is "Elementary flow". Not applicable if "Product flow" or "Waste flow".*	*2-9-36-144-1*
Hierarchy level	@level	o		LevelType		C			Required ("C") only if "Type of flow" is "Elementary flow". Not applicable if "Product flow" or "Waste flow".	2-9-36-144-1-a
Unique category identifier	@catId	o		string	**200**	**C**	**5 … 100**	**Reference to one of the identifiers of "ILCDFlowCategorization.xml" required for elementary flows.**	**Required ("C") only if "Type of flow" is "Elementary flow". Not applicable if "Product flow" or "Waste flow".**	2-9-36-144-1-b
Other content	other	o	[0,1]			O				0
Classification	*classification*	*R*	*[0,n]*			*C*			*Required ("C") only if "Type of flow" is "Product flow" or "Waste flow". Optional if "Elementary flow" for additional classification(s).*	*2-9-36-145*
Name	@name	R		string	**100**	**C**	**10 … 75**		**Required ("C") only if "Type of flow" is "Product flow" or "Waste flow". Optional if "Elementary flow" for additional classification(s).**	1-1-2-7-2-a
Classes	@classes	R		anyURI		C		Reference to classification file ILCDClassification.xml required	Required ("C") only if "Type of flow" is "Product flow" or "Waste flow". Optional if "Elementary flow" for additional classification(s).	1-1-2-7-2-b

FLOW DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
								for prdoct and waste flows.		
class	*class*	R	[1,n]			C			Required ("C") only if "Type of flow" is "Product flow" or "Waste flow". Optional if "Elementary flow" for additional classification(s).	1-1-2-7-2-1
Hierarchy level	@level	r		LevelType		C			Required ("C") only if "Type of flow" is "Product flow" or "Waste flow". Optional if "Elementary flow" for additional classification(s).	1-1-2-7-2-1-a
Unique class identifier	@classId	r		string	**200**	**C**	**1 … 150**	**One of the classes of the file ILCDClassification.xml is to be used.**	**Required ("C") only if "Type of flow" is "Product flow" or "Waste flow". Optional if "Elementary flow".**	1-1-2-7-2-1-b
Other content	other	o	[0,1]			O				0
CAS Number	CASNumber	r	[0,1]	CASNumber		**C**			**Required ("C") if existing and only for elementary flows. Only to be used for single substance flows.**	2-9-36-146
Sum formula	sumFormula	r	[0,1]	String		O			Recommended, only for single substances.	2-9-36-147
General comment on data set	generalComment	o	[0,1]	FTMultiLang		O				2-9-36-150
Other content	other	o	[0,1]			O				0
Quantitative reference	***quantitativeReference***	***r***	***[0,1]***			***C***				***2-9-38***
Reference flow property	referenceToReferenceFlowProperty	r	[1,1]	Int5		**C**			**Rules for which „Reference flow property“ and „Reference unit“ to choose are documented in the „ILCD Handbook - Nomenclature and other conventions“ document.**	2-9-38-151
Other content	other	o	[0,1]			O				0
Geography	***geography***	***o***	***[0,1]***			***O***				***2-9-42***

FLOW DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
Location of supply	locationOfSupply	o	[1,1]	StringMultiLang	25	O	2 … 20		Only used if "Locations" are used and only for "Product flows" and "Waste flows". (Note: Locations of emissions are documented directly with the Process' Inputs and Outputs.) Shall use one of the locations that are specified in the ILCDLocations.xml or other file, as referenced in the field „<flowDataSet @locations>.	2-9-42-152
Other content	other	o	[0,1]			O				0
Technological representativeness	***technology***	***o***	***[0,1]***			***O***				***2-9-43***
Technical purpose of product or waste	technologicalApplicability	o	[0,1]	FTMultiLang		O			Recommended for Product and Waste flows; not applicable to Elementary flows.	2-9-43-1
Technical specification	referenceToTechnicalSpecification	o	[0,n]	GlobalReferenceType		O			Recommended for Product flows, especially for compley products and products of multifunctional processes.	2-9-43-2
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Modelling and validation	***modellingAndValidation***	***r***	***[0,1]***			***C***				***2-11***
LCI method	***LCIMethod***	***r***	***[0,1]***			***C***				***2-11-48***
Type of flow	typeOfDataSet	r	[1,1]	FlowTypeValues		**C**				2-11-48-153
Other content	other	o	[0,1]			O				0
Compliance declarations	***complianceDeclarations***	***r***	***[0,1]***			***C***				***2-11-56***
Compliance	*compliance*	r	[1,n]			C				1-3-22-1
Compliance system name	referenceToComplianceSystem	r	[1,1]	GlobalReferenceType		**C**		**The following entry and source data set is to be used:** • **"ILCD-**	**Must reference to the corresponding source data set of the most recent version of the ILCD compliance system. For the definitions for use in the**	1-3-22-90

FLOW DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
								compliant"	**ILCD Data Network see; see the separate document "ILCD Data Network: Compliance rules and entry-level requirements". Other compliance systems (e.g. of specific EPD schemes etc.) can be referenced in addition.**	
Approval of overall compliance	approvalOfOverallCompliance	o	[0,1]	ComplianceValues		**C**			**For the ILCD related compliance system entries: Make sure to meet the overall requirements; for an overview and specific settings for the ILCD Data Network see the separate document "ILCD Data Network: Compliance rules and entry-level requirements".**	1-3-22-95
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Administrative information	***administrativeInformation***	**r**	**[0,1]**			**C**				**2-13**
Data entry by	***dataEntryBy***	**r**	**[0,1]**			**C**				**2-13-62**
Time stamp (last saved)	timeStamp	r	[0,1]	dateTime		C				1-5-28-104
Data set format(s)	referenceToDataSetFormat	r	[0,n]	GlobalReferenceType		C		„ILCD format“	Must include the reference to the most recent ILCD format version, with its original source data set and UUID / URI. (Can have additional references to other formats („namespaces“) that might be used in the data set for additional information beyond the documentation scope of the ILCD format.)	1-5-28-105
Data entry by:	referenceToPersonOrEntityEnteringTheData	o	[0,1]	GlobalReferenceType		O				1-5-28-103

FLOW DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
Other content	other	o	[0,1]			O				0
Publication and ownership	***publicationAndOwnership***	**r**	**[0,1]**			**C**				**2-13-64**
Data set version	dataSetVersion	m	[1,1]	Version		**V**			**Is typically automatically generated, but may be manually adjusted.**	1-5-30-111
Preceding data set version	referenceToPrecedingDataSetVersion	O	[0,n]	GlobalReferenceType		O				1-5-30-112
Permanent data set URI	permanentDataSetURI	R	[0,1]	anyURI		O			It is strongly recommended to provide aURI that can be used to find the original version of the data set and verify changes or availability of new versions.	1-5-30-300
Owner of data set	referenceToOwnershipOfDataSet	R	[0,1]	GlobalReferenceType		O				1-5-30-115
Other content	other	O	[0,1]			O				0
Other content	other	O	[0,1]			O				0
Flow properties and LCIA factors	***flowPropertiesAndLCIAFactors***	**R**	**[0,1]**			**C**				**2-15**
Flow properties	***flowProperties***	**R**	**[1,1]**			**C**				**2-15-66**
Flow property	*flowProperty*	R	[1,n]			C				2-15-66-1
Data set internal ID	@dataSetInternalID	R		Int5		C				2-15-66-191
Flow property	referenceToFlowPropertyDataSet	r	[1,1]	GlobalReferenceType		**C**			**Must be a reference to one of the ILCD reference flow property data sets, unless a flow property is required and referenced that is not defined under the ILCD.**	2-15-66-190
Mean value (of flow property)	meanValue	r	[1,1]	Real		**C**				2-15-66-192
Minimum	minimumValu	r	[0,1]	Real		O				2-15-66-193

FLOW DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
value	e									
Maximum value	maximumValue	r	[0,1]	Real		O				2-15-66-194
Uncertainty distribution type	uncertaintyDistributionType	o	[0,1]	UncertaintyDistributionTypeValues		O				2-15-66-195
Relative StdDev in %	relativeStandardDeviation95In	r	[0,1]	Perc		O				2-15-66-196
Data derivation type / status	dataDerivationTypeStatus	r	[0,1]	FlowDataDerivationTypeStatusValues		O				2-15-66-198
Comment	generalComment	o	[0,1]	StringMultiLang		O				2-15-66-199
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0

2.6 Flow property data set

LCA practitioners will only rarely need to create a new flow property data set. Such cases are e.g. if specific substance contents are to be modelled (e.g. “Ethane content (volume)“ in natural gas) or specific market prices (e.g. “Market value JP 2010, bulk prices” for cost modelling or economic allocation purposes). An otherwise complete set of Flow property data sets is provided as part of the ILCD reference flow property data sets. Before creating a new flow property data set, it is advised to therefore carefully evaluate the need and verify that it does not yet exist. If new flow property data sets are to be created, see the document "Nomenclature and other conventions" and the existing examples on “Methane content (volume)” and “Market value US 2000, bulk prices” as part of the ILCD reference flow property data sets.

FLOW PROPERTY DATA SET: Field name	Element / attribute name	Requ. Filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance Requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
Flow property data set	***flowPropertyDataSet***	***m***	***[1,1]***			***V***				***4***
	@version	m		SchemaVersion		V			The most recent ILCD format schema version is to be referenced.	
Flow property information	***flowPropertiesInformation***	**m**	**[1,1]**			V				**4-25**
Data set information	***dataSetInformation***	**m**	**[1,1]**			V				**4-25-104**
UUID of flow property data set	UUID	m	[1,1]	UUID		V				4-25-104-273
Name	name	r	[0,1]	StringMultiLang	**100**	**C**	**3 … 50**		**Naming conventions of the „ILCD Handbook - Nomenclature and other conventions" document are to be applied.**	4-25-104-274
Synonyms	synonyms	o	[0,1]	FTMultiLang		O				4-25-104-275
Classification information	*classificationInformation*	r	[0,1]			C				4-25-104-276
Classification	*classification*	r	[0,n]			C				1-1-2-7-2
Name	@name	r		string	**100**	**C**	**10 … 75**		**The classification file ILCDClassification.xml shall be used.**	1-1-2-7-2-a
Classes	@classes	r		anyURI		C				1-1-2-7-2-b
class	*class*	r	[1,n]			C				1-1-2-7-1
Hierarchy level	@level	r		LevelType		C				1-1-2-7-2-1-a
Unique class identifier	@classId	r		string	**200**	**C**	**1 … 150**		**The classes of the file ILCDClassification.xml shall be used.**	1-1-2-7-2-1-b
Other	other	o	[0,1]			O				0

FLOW PROPERTY DATA SET: Field name	Element / attribute name	Requ. Filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance Requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
content										
General comment on data set	generalComment	o	[0,1]	FTMultiLang		O				4-25-104-278
Other content	other	o	[0,1]			O				0
Quantitative reference	***quantitativeReference***	**r**	**[0,1]**			**C**				**4-25-106**
Reference unit	referenceToReferenceUnitGroup	r	[1,1]	GlobalReferenceType		**C**			**Conventions of the „ILCD Handbook - Nomenclature and other conventions" document are to be applied.**	4-25-106-279
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Modelling and validation	***modellingAndValidation***	**o**	**[0,1]**			**O**				**4-27**
Data sources, treatment and representativeness	***dataSourcesTreatmentAndRepresentativeness***	**o**	**[0,1]**			**O**				**4-27-118**
Data source	referenceToDataSource	o	[1,n]	GlobalReferenceType		O			Recommended for „Economic flow properties", i.e. (market) prices.	4-27-118-280
Other content	other	o	[0,1]			O				0
Compliance declarations	***complianceDeclarations***	**r**	**[0,1]**			**C**				**1-3-22**
Compliance	*compliance*	r	[1,n]			C				1-3-22-1
Compliance system name	referenceToComplianceSystem	r	[1,1]	GlobalReferenceType		**C**		**The following entry and source data set is to be used:** • **"ILCD-compliant"**	**Must reference to the corresponding source data set of the most recent version of the ILCD compliance system. For the definitions for use in the ILCD Data Network see; see the separate document "ILCD Data Network:** **Compliance rules and entry-level requirements".** **Other compliance systems (e.g. of specific EPD schemes etc.)**	1-3-22-90

FLOW PROPERTY DATA SET: Field name	Element / attribute name	Requ. Filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance Requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
									can be referenced in addition.	
Approval of overall compliance	approvalOfOverallCompliance	o	[0,1]	ComplianceValues		**C**			**For the ILCD related compliance system entries: Make sure to meet the overall requirements; for an overview and specific settings for the ILCD Data Network see the separate document "ILCD Data Network: Compliance rules and entry-level requirements".**	1-3-22-95
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Administrative information	***administrativeInformation***	**r**	**[0,1]**			**C**				**4-29**
Data entry by	***dataEntryBy***	**r**	**[0,1]**			**C**				**4-29-130**
Time stamp (last saved)	timeStamp	r	[0,1]	dateTime		C				1-5-28-104
Data set format(s)	referenceToDataSetFormat	r	[0,n]	GlobalReferenceType		C		„ILCD format“	Must include the reference to the most recent ILCD format version, with its original source data set and UUID / URI. (Can have additional references to other formats („namespaces“) that might be used in the data set for additional information beyond the documentation scope of the ILCD format.)	1-5-28-105
Other content	other	o	[0,1]			O				0
Publication and ownership	***publicationAndOwnership***	**r**	**[0,1]**			**C**				**4-29-132**
Data set version	dataSetVersion	m	[1,1]	Version		**V**			**Is typically automatically generated, but may be manually adjusted.**	1-5-30-111
Preceding data set version	referenceToPrecedingDataSetVersion	o	[0,n]	GlobalReferenceType		O				1-5-30-112
Permanent data set URI	permanentDataSetURI	r	[0,1]	anyURI		O			It is strongly recommended to provide a URI that can be used to	1-5-30-300

FLOW PROPERTY DATA SET: Field name	Element / attribute name	Requ. Filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance Requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
									find the original version of the data set and verify changes or availability of new versions.	
Owner of data set	referenceToOwnershipOfDataSet	r	[0,1]	GlobalReferenceType		O				1-5-30-115
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0

2.7 Unit group data set

LCA practitioners should very rarely need to create new unit group data sets or insert new units. A complete set of such data sets is provided as part of the ILCD reference unit group data sets. Before creating a new unit group data set, it is advised to therefore carefully evaluate the need and verify that it does not yet exist; see also the document "Nomenclature and other conventions".

UNIT GROUP DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
Unit group data set	***unitGroupDataSet***	***m***	***[1,1]***			***V***				***5***
	@version	m		SchemaVersion		V			The most recent ILCD format schema version is to be referenced.	
Unit group information	***unitGroupInformation***	**m**	**[1,1]**			**V**				**5-33**
Data set information	***dataSetInformation***	**m**	**[1,1]**			**V**				**5-33-138**
UUID of unit group data set	UUID	m	[1,1]	UUID		V				5-33-138-306

UNIT GROUP DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
Name	name	r	[0,1]	StringMultiLang	**100**	**C**	**3 … 50**		**Naming conventions of the „ILCD Handbook - Nomenclature and other conventions“ document are to be applied.**	5-33-138-307
Classification Information	*classificationInformation*	r	[0,1]			C				5-33-138-308
Classification	*classification*	r	[0,n]			C				1-1-2-7-2
Name	@name	r		string	**100**	**C**	**10 … 75**		**The classification file ILCDClassification.xml is to be used.**	1-1-2-7-2-a
Classes	@classes	r		anyURI		C				1-1-2-7-2-b
class	*class*	r	[1,n]			C				1-1-2-7-2-1
Hierarchy level	@level	r		LevelType		C				1-1-2-7-2-1-a
Unique class identifier	@classId	r		string	**200**	**C**	**1 … 150**		**The classes of the file ILCDClassification.xml shall be used.**	1-1-2-7-2-1-b
Other content	other	o	[0,1]			O				0
General comment	generalComment	o	[0,1]	FTMultiLang		O				5-33-138-309
Other content	other	o	[0,1]			O				0
Quantitative reference	***quantitativeReference***	**r**	**[0,1]**			**C**				**5-33-140**
Reference unit	referenceToReferenceUnit	r	[1,1]	Int5		**C**				5-33-140-310
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Modelling and validation	***modellingAndValidation***	**r**	**[0,1]**			**C**				**5-35**
Compliance declarations	***complianceDeclarations***	**r**	**[0,1]**			**C**				**5-35-158**
Compliance	*compliance*	r	[1,n]			C				1-3-22-1

UNIT GROUP DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
Compliance system name	referenceToComplianceSystem	r	[1,1]	GlobalReferenceType		**C**		**The following entry and source data set is to be used:** • **"ILCD-compliant"**	**Must reference to the corresponding source data set of the most recent version of the ILCD compliance system. For the definitions for use in the ILCD Data Network see; see the separate document "ILCD Data Network: Compliance rules and entry-level requirements". Other compliance systems (e.g. of specific EPD schemes etc.) can be referenced in addition.**	1-3-22-90
Approval of overall compliance	approvalOfOverallCompliance	o	[0,1]	ComplianceValues		**C**			**For the ILCD related compliance system entries: Make sure to meet the overall requirements; for an overview and specific settings for the ILCD Data Network see the separate document "ILCD Data Network: Compliance rules and entry-level requirements".**	1-3-22-95
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Administrative information	***administrativeInformation***	**r**	**[0,1]**			**C**				**5-37**
Data entry by	***dataEntryBy***	**r**	**[0,1]**			**C**				**5-37-164**
Time stamp (last saved)	timeStamp	r	[0,1]	dateTime		C				1-5-28-104
Data set format(s)	referenceToDataSetFormat	r	[0,n]	GlobalReferenceType		C		„ILCD format“	Must include the reference to the most recent ILCD format version, with its original source data set and UUID / URI. (Can have additional references to other formats („namespaces“) that might be used in the data set for	1-5-28-105

UNIT GROUP DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
									additional information beyond the documentation scope of the ILCD format.)	
Other content	other	o	[0,1]			O				0
Publication and ownership	***publicationAndOwnership***	**r**	**[0,1]**			**C**				**5-37-166**
Data set version	dataSetVersion	m	[1,1]	Version		**V**			**Is typically automatically generated, but may be manually adjusted.**	1-5-30-111
Preceding data set version	referenceToPrecedingDataSetVersion	o	[0,n]	GlobalReferenceType		O				1-5-30-112
Permanent data set URI	permanentDataSetURI	r	[0,1]	anyURI		O			It is strongly recommended to provide a URI that can be used to find the original version of the data set and verify changes or availability of new versions.	1-5-30-300
Owner of data set	referenceToOwnershipOfDataSet	r	[0,1]	GlobalReferenceType		O				1-5-30-115
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Units	***units***	**r**	**[0,1]**			**C**				**5-39**
Unit	***unit***	**r**	**[1,n]**			**C**				**5-39-168**
Data set internal ID	@dataSetInternalID	r		Int5		C				5-39-168-324
Name of unit	name	r	[1,1]	String	**25**	**C**	**1 … 15**			5-39-168-323
Mean value (of unit)	meanValue	r	[1,1]	Real		**C**				5-39-168-325
Comment	generalComment	o	[0,1]	StringMultiLang		**C**			**The long/full name of the unit shall be given here.**	5-39-168-326
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0

2.8 Source data set

Source data sets serve to document all kinds of information sources used, ranging from data collection sheets, publications, method reports, images, to LCI background databases used, etc.

SOURCE DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
Source data set	***sourceDataSet***	***m***	***[1,1]***			***V***				***7***
version	@version	m		SchemaVersion		V			The most recent ILCD format schema version is to be referenced.	1-a
Source information	***sourceInformation***	**m**	**[1,1]**			**V**				**7-43**
Data set information	***dataSetInformation***	**m**	**[1,1]**			**V**				**7-43-174**
UUID of source data set	UUID	m	[1,1]	UUID		V				7-43-174-354
Short name of source	shortName	o	[0,1]	StringMultiLang	**100**	**C**	**2 … 40**			7-43-174-355
Classification information	*classificationInformation*	r	[0,1]			C				7-43-174-357
Classification	*classification*	r	[0,n]			C				1-1-2-7-2
Name	@name	r		string	**100**	**C**	**10 … 75**		**The classification file ILCDClassification.xml shall be used.**	1-1-2-7-2-a
Classes	@classes	r		anyURI		C				1-1-2-7-2-b
class	*class*	r	[1,n]			C				1-1-2-7-2-1
Hierarchy level	@level	r		LevelType		C				1-1-2-7-2-1-a
Unique class identifi	@classId	r		string	**200**	**C**	**1 … 150**		**The classes of the file ILCDClassification.xml shall be used.**	1-1-2-7-2-1-b

SOURCE DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
er										
Other content	other	o	[0,1]			O				0
Source citation	sourceCitation	r	[0,1]	ST		**C**	**20 … 500**			7-43-174-356
Publication type	publicationType	o	[0,1]	PublicationTypeValues		**C**			Required ("C") only if the source is an image (in support of embedded display in process data sets). General use of field recommended.	7-43-174-359
Source description or comment	sourceDescriptionOrComment	o	[0,1]	FTMultiLang		O				7-43-174-360
Link to digital file	*referenceToDigitalFile*	o	[0,1]			O				7-43-174-361
	@uri	o		anyURI		O				
Belongs to:	referenceToContact	o	[0,n]	GlobalReferenceType		O				6-41-172-344
Logo of organisation or source	referenceToLogo	o	[0,1]	GlobalReferenceType		O				6-41-172-346
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Administrative information	***administrativeInformation***	**r**	**[0,1]**			**C**				**1-5**
Data entry by	***dataEntryBy***	**r**	**[0,1]**			**C**				**1-5-28**
Time stamp (last saved)	timeStamp	r	[0,1]	dateTime		C				1-5-28-104
Data set format(s)	referenceToDataSetFormat	r	[0,n]	GlobalReferenceType		C		„ILCD format“	Must include the reference to the most recent ILCD format version, with its original source data set and UUID / URI. (Can have additional references to other formats („namespaces“) that might be used in the data set for additional information beyond the documentation scope of the ILCD	1-5-28-105

SOURCE DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
									format.)	
Other content	other	o	[0,1]			O				0
Publication and ownership	***publicationAndOwnership***	**r**	**[0,1]**			**C**				**1-5-30**
Data set version	dataSetVersion	m	[1,1]	Version		**V**			**Is typically automatically generated, but may be manually adjusted.**	1-5-30-111
Preceding data set version	referenceToPrecedingDataSetVersion	o	[0,n]	GlobalReferenceType		O				1-5-30-112
Permanent data set URI	permanentDataSetURI	r	[0,1]	anyURI		O			It is strongly recommended to provide a URI that can be used to find the original version of the data set and verify changes or availability of new versions.	1-5-30-300
Owner of data set	referenceToOwnershipOfDataSet	r	[0,1]	GlobalReferenceType		O				1-5-30-115
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0

2.9 Contact data set

Contact data sets serve to identify organisations, persons and the like. These can be the experts that have modelled a data set, reviewers, data set owners, etc.

CONTACT DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
Contact data	***contactDataSet***	***m***	***[1,1]***			***V***				***6***

CONTACT DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
set										
version	@version	m		SchemaVersion		V			The most recent ILCD format schema version is to be referenced.	1-a
Contact information	***contactInformation***	**m**	**[1,1]**			**V**				**6-41**
Data set information	***dataSetInformation***	**m**	**[1,1]**			**V**				**6-41-172**
UUID of Contact data set	UUID	m	[1,1]	UUID		V				6-41-172-327
Short name for contact	shortName	o	[0,1]	StringMultiLang	**25**	**C**	**2 … 40**			6-41-172-328
Name of contact	name	r	[0,1]	StringMultiLang	**100**	**C**				6-41-172-329
Classification Information	*classificationInformation*	r	[0,1]			C				6-41-172-336
Classification	*classification*	r	[0,n]			C				1-1-2-7-2
Name	@name	r		string	**100**	**C**	**10 … 75**		**The classification file ILCDClassification.xml shall be used.**	1-1-2-7-2-a
Classes	@classes	r		anyURI		C				1-1-2-7-2-b
class	*class*	r	[1,n]			C				1-1-2-7-2-1
Hierarchy level	@level	r		LevelType		C				1-1-2-7-2-1-a
Unique class identifier	@classId	r		string	**200**	**C**	**1 … 150**		**The classes of the file ILCDClassification.xml shall be used.**	1-1-2-7-2-1-b
Other content	other	o	[0,1]			O				0
Contact address	contactAddress	o	[0,1]	STMultiLang		O				6-41-172-338
Telephone	telephone	o	[0,1]	String		O				6-41-172-339
Telefax	telefax	o	[0,1]	String		O				6-41-172-340

CONTACT DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
E-mail	email	o	[0,1]	String		O				6-41-172-341
WWW-Address	WWWAddress	r	[0,1]	ST		O				6-41-172-342
Central contact point	centralContactPoint	r	[0,1]	STMultiLang		**C**				6-41-172-343
Contact description or comment	contactDescriptionOrComment	o	[0,1]	STMultiLang		O				6-41-172-345
Belongs to:	referenceToContact	o	[0,n]	GlobalReferenceType		O				6-41-172-344
Logo of organisation or source	referenceToLogo	o	[0,1]	GlobalReferenceType		O				6-41-172-346
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Administrative information	***administrativeInformation***	**r**	**[0,1]**			**C**				**1-5**
Data entry by	***dataEntryBy***	**r**	**[0,1]**			**C**				**1-5-28**
Time stamp (last saved)	timeStamp	r	[0,1]	dateTime		C				1-5-28-104
Data set format(s)	referenceToDataSetFormat	r	[0,n]	GlobalReferenceType		C		„ILCD format“	Must include the reference to the most recent ILCD format version, with its original source data set and UUID / URI. (Can have additional references to other formats („namespaces“) that might be used in the data set for additional information beyond the documentation scope of the ILCD format.)	1-5-28-105
Other content	other	o	[0,1]			O				0
Publication and ownership	***publicationAndOwnership***	**r**	**[0,1]**			**C**				**1-5-30**
Data set version	dataSetVersion	m	[1,1]	Version		**V**			**Is typically automatically generated, but may be manually adjusted.**	1-5-30-111

CONTACT DATA SET: Field name	Element / attribute name	Requ. filter indicator	Min / max occ.	Data type	Max. No. characters	Compliance requ. type	Indicative text lengths IF field in use (chars)	Mandatory entry (if any)	Comment (requirements, recommendations, explanations)	eDoc ID
Preceding data set version	referenceToPrecedingDataSetVersion	o	[0,n]	GlobalReferenceType		O				1-5-30-112
Permanent data set URI	permanentDataSetURI	r	[0,1]	anyURI		O			It is strongly recommended to provide a URI that can be used to find the original version of the data set and verify changes or availability of new versions.	1-5-30-300
Owner of data set	referenceToOwnershipOfDataSet	r	[0,1]	GlobalReferenceType		O				1-5-30-115
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0
Other content	other	o	[0,1]			O				0

2.10 LCIA method data set

LCIA method data sets serve to document the characterisation factors of the respective method as well as underlying models and data sources used. LCIAS method data sets can also represent a complete LCIA methodology, i.e. a compilation of LCIA methods that are foreseen to be used jointly and cover typically a range of complementary impact categories.

Specific requirements for documentation-compliance have not yet been defined for LCIA method data sets. The complete LCIA method data set format specification is available inthe ILCD format developer kit, same as for the other data set types.

2.11 For all data set types applies moreover...

Information in a data set may be given in any language, but all information to be provided according to the above compliance rules has to be given at least once and in the same language. The used language is to be correctly identified by giving the correct *lang* attribute inside each format tag (see format specifications; this is usually done by the LCA software/editor supporting the documentation).

The preferred language is English (xml:lang="en"), but also other languages can be used alternatively (and in addition).

I. Annex A: Illustrative example of ILCD documentation-compliant Process data set

Note: the documentation extent of this data set is based on an earlier draft of the requirements and not exactly meeting all requirements.

Process data set: Aluminium extrusion profile; primary production; production mix, at plant; aluminium semi-finished extrusion product, including primary production, transformation and recycling (en)

Table of Contents: Process information - Modelling and validation - Administrative information - Inputs and Outputs

Process information

Key Data Set Information

Location	RER
Geographical representativeness description	The data set is based on average site-specific data of the European aluminium industry. Electricity grid mix is country-specific. Other upstream data are based on global averages.
Reference year	2005
Name	Base name; Treatment, standards, routes; Mix and location types; Quantitative product or process properties Aluminium extrusion profile; primary production; production mix, at plant; aluminium semi-finished extrusion product, including primary production, transformation and recycling
Use advice for data set	This data set can be used for LCA studies related to products made in Europe and which include aluminium profiles. The data set includes the burden and credit associated with the recycling of aluminium scrap over the whole life cycle using the substitution methodology for taking into account the recycling phase. The substitution methodology considers that recycled aluminium substitutes primary aluminium so that only metal losses during the various phases need to be balanced by primary aluminium. The used average recycling rate is 88% for aluminium extruded products. For more details and further LCI data sets related to aluminium extruded products, please contact LCI@eaa.be.
Technical purpose of product or process	Aluminium profiles are used as structural components in many sectors like in building (window frames, balcony, scaffolding, etc.), in transportation (BIW, bumpers, seat frames, etc.) or in engineering. Thanks to the high versatility of the cross-sectional shape, aluminium profiles can integrate many functions in addition to the structural properties. Aluminium profiles can be formed and joined with other components. Aluminium profiles can be anodised or/and coated.
Synonyms	Aluminium profile, aluminium extrusion
Classification	Class name / Hierarchy level Materials production / Metals and semimetals
General comment on data set	The environmental data have been collected through an extensive environmental survey, organised among the European aluminium industry, focussing on the year 2005 and covering EU-27 countries as well as EFTA countries (Norway, Iceland, and Switzerland). From this survey, European average values, i.e. foreground data, have been calculated for the direct inputs and outputs of the various aluminium processes. Using the GaBi software system , the foreground data have been combined within LCI models integrating background LCI data on energy supply systems, ancillary processes and materials. From these models, generic European LCI data sets have been developed respectively for the production of primary and recycled aluminium ingots and for the transformation of aluminium ingots into semi-finished products, i.e. sheet, foil and extruded products. For the development of the LCI data related to primary aluminium production, a specific model for the electricity production has been developed. Alloying elements have not been considered in these data sets and have been substituted by pure aluminium. The methodology and the various environmental and LCI data have been published in an environmental profile report which is available for download from the website of the European Aluminium Association (www.eaa.net). Professor Walter Kl"pffer, as an independent expert, has critically reviewed the entire LCI project including the data collection, the data consolidation, the development of the various LCI models and the calculation of the associated LCI data sets. This critical review, which is attached at the end of the report, has confirmed that the LCI data sets were developed in accordance with ISO 14040 and 14044 standards. The LCI data sets related to primary production, recycling and extrusion have been combined together according to the flow diagram reported below in order to generate the generic LCI data set for semi-finished aluminium extruded products.
	Copyright? Yes Owner of data set (contact data set) EAA

Quantitative reference

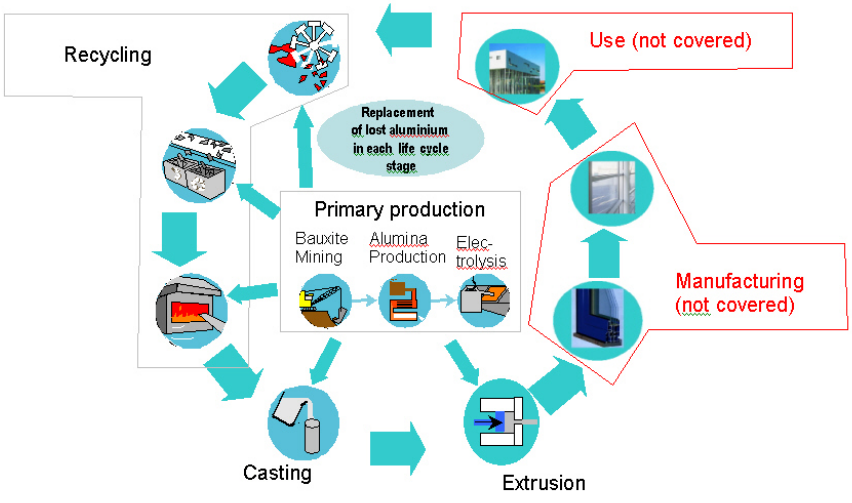
Reference flow(s)	aluminium extrusion profile; primary production; production mix, at plant; aluminium semi-finished extrusion product, including primary production, transformation and recycling - 1000 kg (Mass)

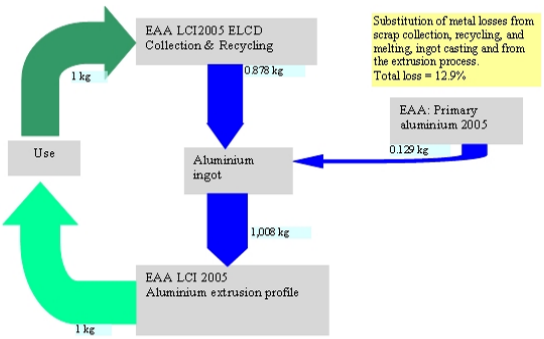
Time representativeness

Data set valid until:	2011
Time representativeness description	Annual average, site specific data of European Aluminium industry. Ancillary processes (e.g. electricity) and materials (NaOH, CaO, etc.) as specified within the GaBi database 2006.

Geographical representativeness

Technological representativeness

Technology description including background system	Aluminium profiles are produced through the extrusion process. These profiles are produced from aluminium ingots called billets (usually cylinders) which are pressed at hot temperature (400-500°C) through shaped dies. Aluminium billets are produced by DC (Direct Chill) casting in cast houses. Primary and recycled aluminium as well as alloying elements (Mg, Si, etc.) are used for producing aluminium billets. Primary aluminium production comprises the following 3 steps: bauxite mining, alumina production and aluminium production by electrolysis in smelters. The electric energy production used in European smelters has been modelled using a specific electricity model. Aluminium imports have also been considered in this electric model. The recycling rate (78% for sheet and 88% for profile) includes metal loss during collection, processing and melting. Collection rates have been defined through studies or estimates while the ESSUM model has been used to calculate the metal yield during melting (please email lci@eaa.be for details).
Pictogramme of technology (source data set)	



Modelling and validation

LCI method and allocation

Type of data set	*LCI result*
LCI method principle	*Attributional*
Deviation from LCI method principle / explanations	None
LCI method approaches	*Allocation - 100% to main function*
	Substitution - recycling potential
Deviations from LCI method approaches / explanations	Recycling is credited through system expansion as recommended by ISO 14044.
Modelling constants	The data set includes the burden and credit associated with the recycling of aluminium scrap produced at casting, rolling and end-of-life process steps. For end-of-life recycling, an average recycling rate of 88 % is used for aluminium profiles. For primary production, a country-based electricity grid mix model is used including aluminium imports from outside Europe. The net calorific value is used in this model.
Deviation from modelling constants / explanations	None

Data sources, treatment, and representativeness

Data cut-off and completeness principles	According to ISO14040: 99% cut-off criteria (mass) applied for non-hazardous inputs and outputs except alloying elements which are not considered. No cut-off criteria for hazardous products or emissions (e.g. PAH, PFC, BaP, etc.). Infrastructure is not included. All ancillary processes (electricity, caustic soda, etc.) are included.
Deviation from data cut-off and completeness principles / explanations	None
Data selection and combination principles	Data set based on average site-specific data - on an annual basis. Horizontal aggregation is used to calculate European average per process. A modular modelling of processes is used for easy vertical combination. LCI modelling is fully consistent.
Deviation from data selection and combination principles / explanations	None
Data treatment and extrapolations principles	LCI data are based on European averages calculated from site-specific data. Unallocated data have been distributed on processes by linear extrapolation. Aluminium imports to Europe have been considered for the calculation of the LCI data for primary production. Worlwide average data have been considered for bauxite mining.
Deviation from data treatment and extrapolations principles / explanations	None
Data source(s) used for this data set (source data set)	GaBi databases 2006
	European Reference Life Cycle Data System" (ELCD), v 1.0.1, 2007
	Life Cycle Inventory Data Primary Aluminium, 2005
Percentage supply or production covered	99.0 %

Completeness

Completeness product model	*All relevant flows quantified*

Validation

Review	*Dependent internal review*

Scope of review	Method(s) of review
Raw data	*Cross-check with other data set*
	Expert judgement
	Mass balance
LCI results or Partly terminated system	*Cross-check with other data set*
	Expert judgement
	Mass balance
	Compliance with ISO 14040 to 14044
Life cycle inventory methods	*Expert judgement*
	Compliance with ISO 14040 to 14044

Review details	Inventory: The critical review process made by Walter Klöpffer has confirmed that the full LCI project is conform to ISO 14040 & 14044. The methods used in data collection and modelling are described clearly and correspond to the state of the art. They should be published and become standard for generic data collection. The background data used in addition to the foreground data stem from one of the leading software systems. The interpretation is in accordance with the restricted scope and refers to the representativity and quality of the original data. Although not statistically analysed, the user can be sure to have the best possible data set for Al in Europe. In the future there may be a greater demand for statistically analysed data in order to perform error calculations and uncertainty analysis, this may lead to higher expectations with regard to the primary data deliverers. Finally, the report is transparent and consistent. It is clearly written and well printed. This LCI project is an excellent example for generic data acquisition, consolidation and presentation. It contributes to the Life Cycle Assessment development by providing reliable data for one important material and continues a tradition of more than a decade in an exemplary way.; LCI Method: LCI data have been generated through LCI models developed with the GaBi software system in full reference to ISO standards 14040 and 14044 on Life Cycle Assessment. The corresponding EAA environmental profile report published in 2008 (covering year 2005) has been certified by Professor Walter Klöpffer.
Reviewer name and institution (contact data set)	EAA
Subsequent review comments	The EAA environmental profile report published in 2000 (covering year 1998) has been certified by Ian Boustead. The EAA followed exactly the same LCI methodology for organising the survey and consolidating the data related to the year 2002.

Compliance declarations

Compliance	Compliance system name (source data set)	Approval of overall compliance	Nomenclature compliance	Methodological compliance	Review compliance	Documentation compliance
	ILCD Data Network compliance - Entry level phase I	*Fully compliant*	*Fully compliant*	*Fully compliant*	*Fully compliant*	*Fully compliant*

Administrative information

Commissioner and goal

Commissioner of data set (contact data set)	EAA
	EC, DG ENV
	EPLCA project team
Project	The Environmental profile report for the European Aluminium Industry (April 2008) can be downloaded from the EAA website.
Intended applications	The European aluminium Association (EAA) has collected LCI data representative for aluminium in Europe. Whenever organisations are doing LCA for aluminium products in which it is appropriate to use European data, EAA is happy to contribute in supplying information and data, making its best to provide information in line with the study goal and scope. EAA can deliver data sets related to the following processes: - Alumina production - Aluminium electrolysis and ingot casting - Aluminium rolling - Aluminium extrusion - Aluminium process scrap remelting - Recycling of aluminium end-of-life products.

Data set generator / modeller

Data set generator / modeller (contact data set)	EAA

Data entry by

Time stamp (last saved)	2009-02-18 10:23:02 +01:00
Data set format(s) (source data set)	ILCD format
Converted original data set from: (source data set)	EAA Method Report
Data entry by: (contact data set)	LBP-GaBi
Official approval of data set by producer/operator: (contact data set)	EAA

Publication and ownership

UUID of Process data set	09215eb0-5fc9-11dd-ad8b-0800200c9a66
Data set version	02.00.000
Permanent data set URI	http://lca.jrc.ec.europa.eu/lcainfohub/datasets/elcd/processes/09215eb0-5fc9-11dd-ad8b-0800200c9a66_02.00.000.xml
Workflow and publication status	*Data set finalised; entirely published*
Unchanged re-publication of: (source data set)	ELCD database 2.0
Owner of data set (contact data set)	EAA
Access and use restrictions	The data set can be used free of charge by anybody to perform LCA studies, to distribute it to third parties, to convert it to other formats, to develop own data sets etc. as long as the copyright and license conditions for the ELCD data sets and the ILCD format are met that can be accessed via http://lca.jrc.ec.europa.eu. Please note e.g. that reference must be given to the 'Owner of data set' and to the 'ELCD database' plus version number, when using the data set or parts thereof. Please note also, that any modifications/omissions of the data set results in invalidity of any existing 'Official approval of data set by producer/operator', that the impression must be avoided that this would still be a complete ELCD data set, and that the content of further fields has to be adjusted. For details see the aforementioned copyright and license conditions.

Inputs and Outputs

Inputs

Type Of Flow	Classification	Flow	Resulting amount	Mean amount	Data source type	Data derivation type / status
Elementary flow	Resources / Resources from air / Renewable material resources from air	air	10734.5454752932 kg (Mass)	10734.5454752932	*Mixed primary / secondary*	*Unknown derivation*
Elementary flow	Resources / Resources from ground / Non-renewable material resources from ground	barium sulfate	6.82166439127194E-11 kg (Mass)	6.82166439127194E-11	*Mixed primary / secondary*	*Unknown derivation*
Elementary flow	Resources / Resources from ground / Non-renewable material resources from ground	baryte	2.16179493011325 kg (Mass)	2.16179493011325	*Mixed primary / secondary*	*Unknown derivation*
Elementary flow	Resources / Resources from ground / Non-renewable material resources from ground	basalt	1.49268558255772 kg (Mass)	1.49268558255772	*Mixed primary / secondary*	*Unknown derivation*
Elementary flow	Resources / Resources from ground / Non-renewable material resources from ground	bauxite	612.801388638064 kg (Mass)	612.801388638064	*Mixed primary / secondary*	*Unknown derivation*

■ ■ ■

European Commission

EUR 24381 EN – Joint Research Centre – Institute for Environment and Sustainability

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Abstract

Life Cycle Thinking (LCT) and Life Cycle Assessment (LCA) are the scientific approaches behind modern environmental policies and business decision support related to Sustainable Consumption and Production (SCP). The International Reference Life Cycle Data System (ILCD) provides a common basis for consistent, robust and quality-assured life cycle data and studies. Such data and studies support coherent SCP instruments, such as Ecolabelling, Ecodesign, Carbon footprinting, and Green Public Procurement. This document supports the International Reference Life Cycle Data System (ILCD) Data Network. It provides the provisions for ILCD documentation-compliant LCA data sets under the ILCD Handbook and ILCD Data Network. The document also lists the general possibilities of the ILCD data set format for the documentation of LCA data sets for technical audience (e.g. LCA practitioners and reviewers). The term “LCA data sets” is used here as cover term for the following types of data sets: Process data set, Flow data set, Flow property data set, Unit group data set, Source data set, and Contact data set, as well as LCIA method data sets. The principle target audience for this document is the LCA practitioner and reviewer. This document is based on and conforms to the ISO 14040 and 14044 standards on LCA.

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